



High Tunnel Vegetable Trials

John Bombardiere
Farm Supervisor
Hort Farm 3
New Brunswick, NJ

Collaborators

- West Virginia State University
 - Dr. Annette Eriksen : Assistant Program Leader Ag Extension
- West Virginia University
 - Dr. Lewis Jett : Extension Specialist Horticulture
- West Virginia Department of Agriculture
- Hudson Farms
 - Dr. Terry Hudson : Big Chimney, WV

Climate Change in WV

- Warmer average early winter and late fall temperatures
- No yearly deviation from first/last frost dates
- No deviation from annual precipitation
- More very heavy rainfall events (71% increase from 1958)

From National Climate Assessment

<https://nca2014.globalchange.gov/>

Challenges for Vegetable Growers

- Inability to plant frost sensitive plants earlier in field due to May frost dates
- See killing frost in October followed by several frost free weeks
- Perceived increase in insect populations
- Intense rainfall events contributing to increased disease incidence, poor fruit quality, and more frequent flooding

High Tunnels

- Protected culture for earlier plantings in spring and later fall harvest
- Controlled soil moisture for proper fruit development
- Reduce soil splash disease transmission
- NRCS cost share

Planting Schedule

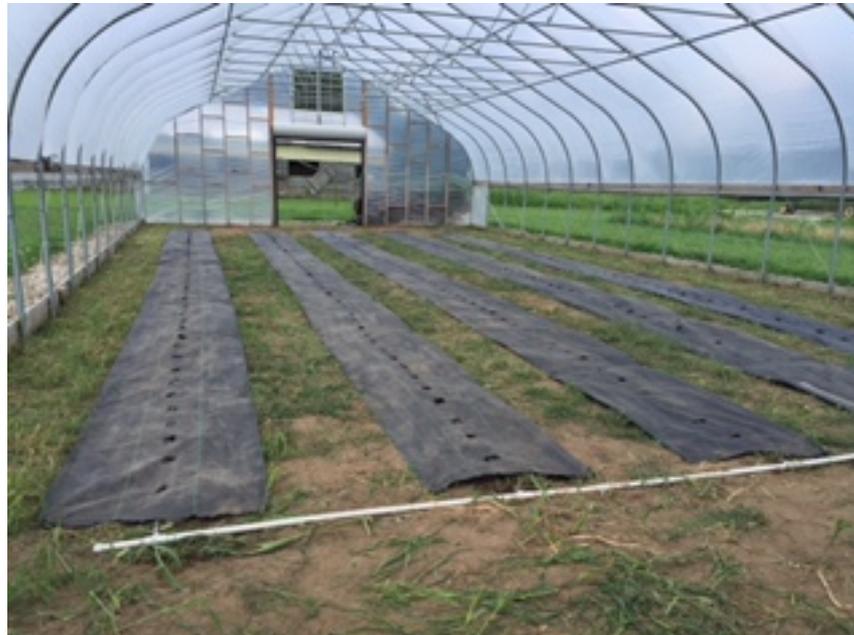
- Past schedule based on fall planting of greens for spring harvest followed by summer crops of tomatoes or peppers
- Long fall harvests of frost sensitive crops (up to December 15 in some years) result in missed planting dates for spring harvested greens and root crops
- Fall planted strawberries leave window for mid summer planting of 70 – 80 day crop
- Saturated lettuce market and demand for more diverse Farm-to-School offerings have lead growers to reevaluate crops

Aim of the Trials

- Test crops which fit grower needs in high tunnels for early planted summer fruiting crop (zucchini), mid-summer planted crop (cantaloupe) and mid winter planted crop (garlic)
- Variety trial of parthenocarpic zucchini to address grower observations of poor fruiting in early spring planted crops
- Variety trial of garlic to test varieties for yield and quality
- Yield data and suitability for trellised cantaloupe bound for September farm-to-school sales

High Tunnel

- 30 x 72 with roll up sides and passive vents
- Located in West Columbia, WV
- Sandy Loam Soil
- Adequate to very high soil nutrient levels
- pH 6.6



Zucchini Trial

- Three Parthenocarpic Varieties
 - Partenon : Pale Green
 - Easy Pick Green
 - Easy Pick Gold
- Two Varieties shown be Parthenocarpic (2013 trial, Dr. Steve Reiners, Cornell University)
 - Noche : Dark Green
 - Golden Glory
- Three replications, five plants per rep
- Spacing 2 ft x 6 ft
- Transplanted into high tunnel April 4



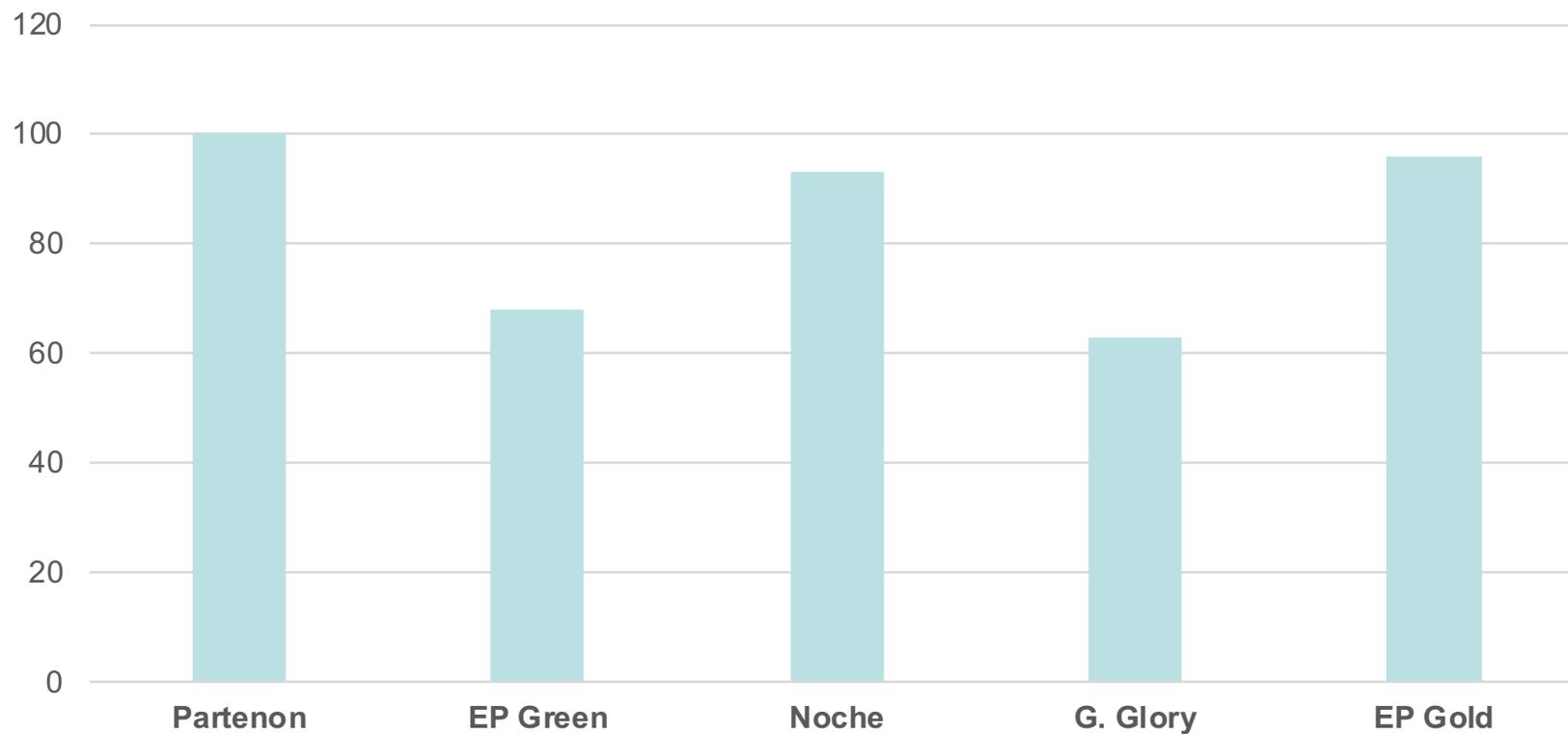
Zucchini Trial

- Harvested May 16 – June 12
- Total number, weight, and length recorded
- Average weight
 - Green Varieties 420 grams
 - Yellow Varieties 300 grams
- Average length
 - Green Variety 9 inches
 - Yellow Varieties 8 inches



Zucchini Yield

Fruit Number

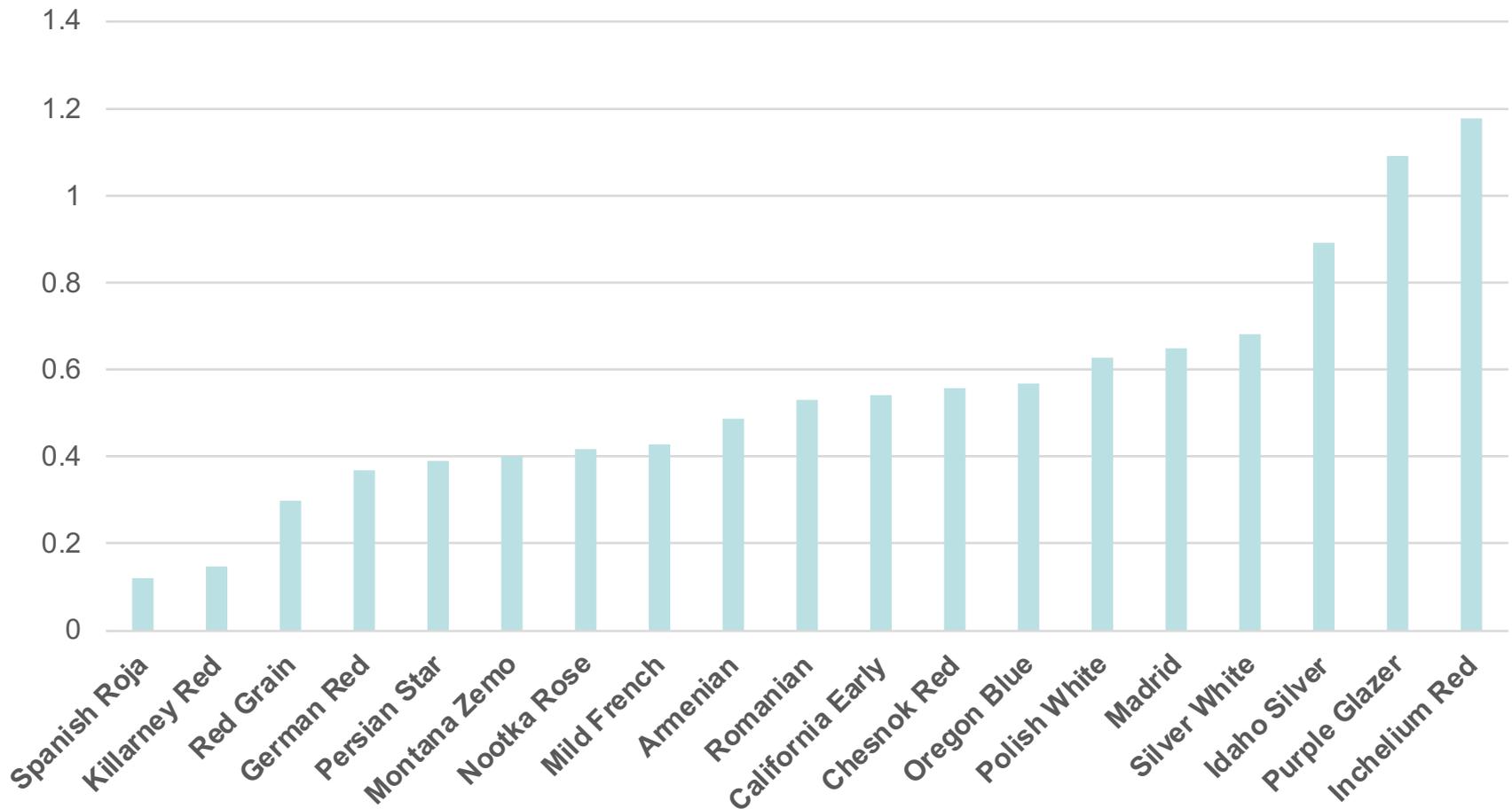


High Tunnel Garlic Trials

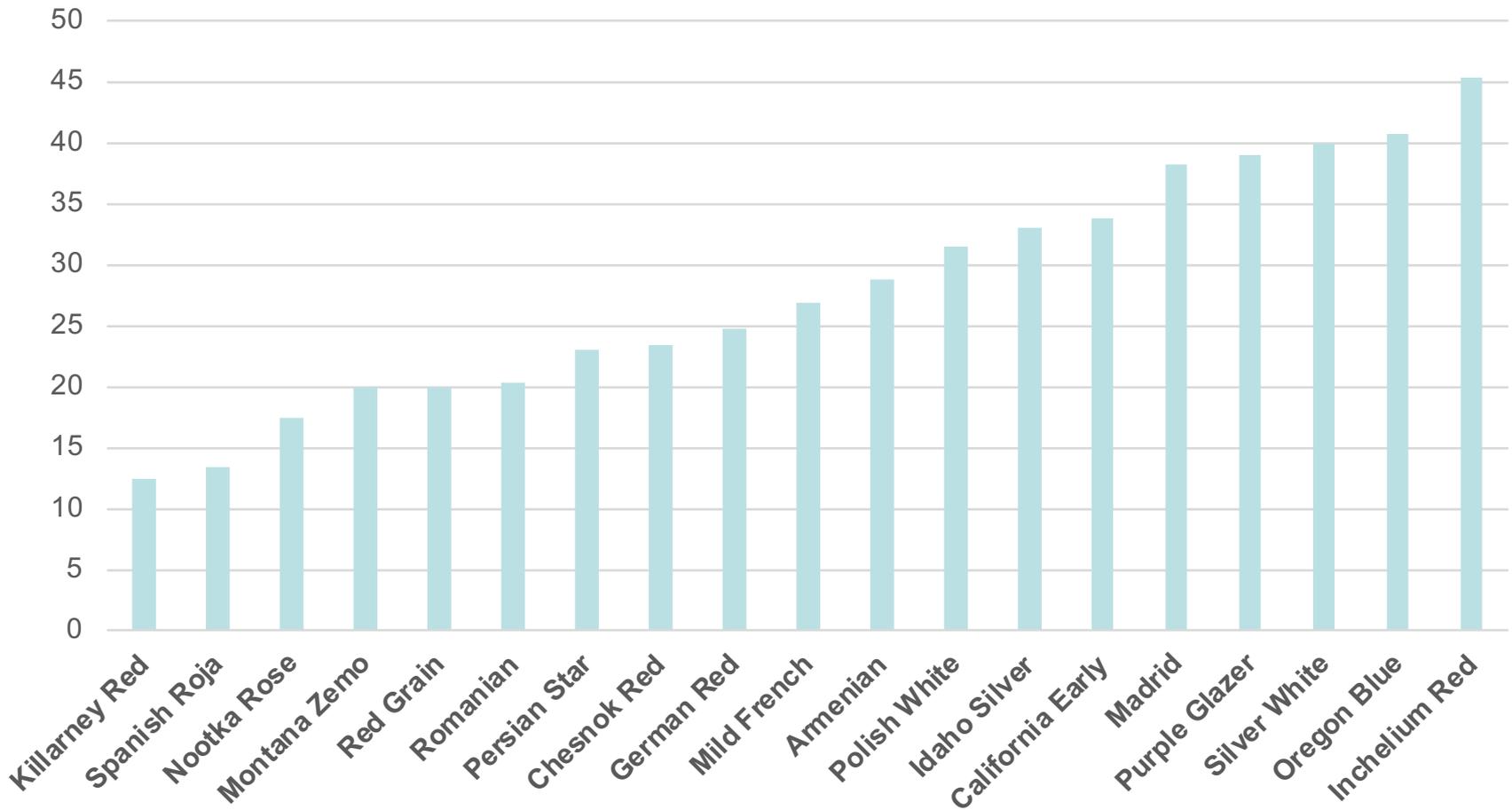
- Nineteen Varieties
- Prepunched Paper Mulch, 5.5 Inch Spacing
- Three Replications, 10 Plants per Rep
- Planting Date January 9
- Harvest Date June 23
- Bulb Number and Weight Recorded



High Tunnel Garlic Yield (kg)



High Tunnel Garlic Bulb Weight (g)



Cantaloupe Trial

- Sugar Cube personal melon
- Trellised and spaced 3' in row x 6' between row (96 plants)
- July 11 transplanting date
- Harvest September 12 – September 30
- Total of 250 marketable fruit harvested (Raccoon damaged an estimated 150 more fruit)
- Average weight 2.2 lbs : Brix 12
- Introduced to School Districts for Farm-to-School
- Potential Pharmacy use



Thanks to

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- Paul Gallione Johnny's Selected Seeds
- Melissa Stewart



Questions

John Bombardiere

67 Ryders Lane East Brunswick, NJ 08816

732-932-9176

john.bomb@rutgers.edu